ABB Ability™ Energy Management
OPTIMAX for Green Hydrogen

The Shift to Green Hydrogen

Utility and industrial companies are facing heightened pressures to find new ways of harnessing the power of renewable energy. Power and water utilities, for example, are searching for opportunities to reduce their carbon footprint, and better leverage excess renewable power. Industrial companies are searching for ways to decarbonize their processes, and minimize energy costs.

The energy landscape is changing with the need for decarbonization.
The energy sector is moving away from the linear approach where utilities produce energy and deliver it downstream to consumers, and moving towards an ecosystem where production and consumption collaborate with each other. **The future involves producers and consumers using each other's energy streams to increase efficiencies and maximize the value of energy.** Green hydrogen is playing a vital role in this transformation.

ABB Ability™ Energy Management – OPTIMAX for Green Hydrogen
The key to harnessing the shift towards green hydrogen is energy management and optimization.

ABB Ability™ Energy Management - OPTIMAX® helps to increase efficiencies and maximize the total value of energy created and used by strategically directing energy flows and assets.

ABB Ability™ Energy Management – OPTIMAX for Green Hydrogen supports ABB's automation and electrification solutions so that energy producers and industrial plants coordinate their assets, generation and production to optimize the total value of energy. It helps:

- Optimize asset performance
- Simulate and virtualize the most productive energy flows and use adaptive control to achieve them
- Forecast energy demand and supply, including renewable energy

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01 OPTIMAX for Green Hydrogen offers real-time optimization, intra-day optimization and energy monitoring and reporting.

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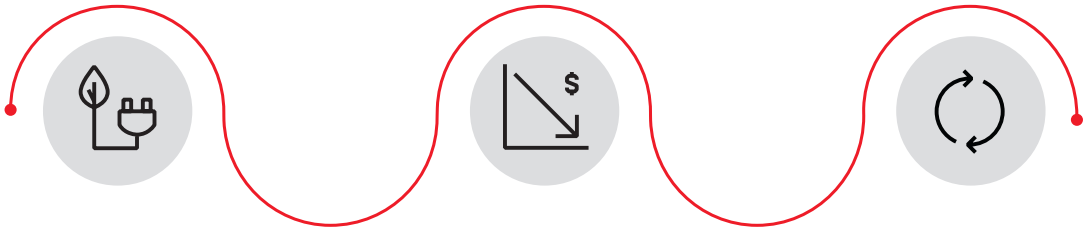
Key benefits of OPTIMAX for Green Hydrogen



Increased efficiency
Better utilization of real-time efficiency curves produces increases in efficiency.

The technology enables customers to:
- Consider individual efficiency curves for each electrolyzer module (including electrical)
- Operate the facility at the optimal point for varying set points
- Improve efficiency irrespective of the brand of electrolyzers

Reduced electrical life cycle cost
Avoid up to 20% of electrical life cycle costs by optimizing usage of electrical sources and optimally taking the obligations from downstream process into account.

Better decisions, more quickly
Increased transparency with better monitoring and reporting, leading to improved profit potential.

The technology enables customers to identify areas of improvement more easily and quickly.
- Contextualize and analyze your data for transparent and efficient plant operation
- Reduce time spent on regulatory reporting

3 key elements to the ABB Ability™ Energy Management approach

- Enabling **energy efficient** and **low carbon operations** across traditional industries
- Supporting development of **new & renewable energy models**
- Driving more **responsible use** of resources

Use cases

A utility is looking to make better use of excess renewable power instead of selling it at lower prices.

With ABB Ability™ Energy Management – OPTIMAX for Green Hydrogen, the utility can optimally orchestrate energy flows based on renewable generation and downstream demand.

The utility can also use a hydrogen plant to convert the excess wind power or solar power into hydrogen. Downstream consumers, such as industrial plants, heavy industry, and hydrogen fuel stations, can consume the produced hydrogen.

As a result, **the utility can leverage excess renewable power,** selling it for the optimal price and optimal time.

An industrial plant is looking to decarbonize its industrial processes, replace grey hydrogen with green hydrogen, and exploit and avoid peak times and prices.

The facility implements ABB Ability™ Energy Management – OPTIMAX for Green Hydrogen to monitor, control and optimize multiple individual electrolyzer modules at the plant.

With ABB, the facility can balance available energy sources to ensure availability, while leveraging optimal market pricing. As a result, **reducing the plant's OPEX lifecycle cost by up to 20%.**

ABB supports early engagement
Early engagement ensures optimal design of your Hydrogen project. Starting with consultancy and analysis during conceptual phase (FEED and Pre-FEED, for example), we support with ABB Adaptive Execution™ from design and planning to operation and maintenance throughout the lifecycle.

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For more information
Please contact your local ABB sales representative or visit:

new.abb.com/power-generation/service/advanced-services/energy-management